ARIZONA DEPARTMENT OF TRANSPORTATION

PROJECT LIFE CYCLE DOCUMENTATION

December 21, 2004

COST ACCOUNTING SECTION

FINANCIAL MANAGEMENT SERVICES

ARIZONA DEPARTMENT OF TRANSPORTATION
PROJECT LIFE CYCLE DOCUMENTATION

BACKGROUND

The purpose and scope of this document is to create a narrative overview of the entire process that the Arizona Department of Transportation (ADOT) uses for projects to accomplish work on the Arizona State Highway System. The term "project", as used by ADOT in this document, is defined as: a location specific, explicitly defined effort, with an established scope of work, that is either accomplished or administered by ADOT staff, for the purposes of completing work on the highways, bridges, or highway-related buildings, (such as rest areas, which are associated with the highways). A project may last from one month to several years, depending on the extent of the work to be accomplished. This document will follow the life of an "idea" for work needing to be done on the highway system through all of the steps needed to see a project completed by ADOT. This paper's documentation will review processes utilized by ADOT including studies, design work, right-of-way purchase, and the actual construction. All areas of responsibility will be covered, including programming, budgeting, financing, and most program areas involved.

A: INTRODUCTION

Arizona's Current State Highway System and Other Public Roads

There are approximately 57,164 miles of public roads in the State of Arizona, according to the State Highway Log maintained by the Transportation Planning Division of the Arizona Department of Transportation (ADOT). Of these miles of public roads, 6,912 miles comprise the state highway system, which is an asset of the state and is administered by ADOT. ADOT builds, repairs and, if necessary, replaces the roads that are under the state's jurisdiction. The remainder of the public roads and structures are owned and administered by the various jurisdictions in which the roads lie. ADOT may have participated in the building of these locally maintained roads at one time, and assists on an on-going basis with the repair and replacement of these roads and bridges by "passing through" federal funds from the Federal Highway Administration, (FHWA) and by providing professional expertise in managing construction contracts and inspecting bridges.

The state law that established ADOT and governs its operations is Arizona Revised Statutes (ARS) 28-331. The statute specifies that the "Arizona Department of Transportation shall provide for an integrated and balanced state transportation system." The law also specifies that the ADOT Director has the responsibility for the administration of the agency. In addition to the Director, ADOT has a Deputy Director and a Chief of Staff. Reporting to the Deputy Director are five division heads: the State Engineer, who directs the Intermodal Transportation Division (ITD); the head of the Aeronautics Division; the head of the Motor Vehicle Division (MVD); the head of the Transportation Planning Division (TPD); and the head of the Public Transportation Division (PTD). The Transportation Services Group (TSG) (which includes all support functions for these divisions) is under the oversight of the Chief of Staff, who also reports directly to the

Director and Deputy Director. Attachment #1: the ADOT Organization Chart shows these relationships. The successful completion of the Project Life Cycle in ADOT is dependent upon the close cooperation of the ITD, the TPD, the PTD, and the TSG. The MVD is involved in collecting and recording revenues used to fund project activity. The motor vehicle license tax, fuel tax, and other special fees are collected by MVD for deposit to and distribution from the Highway User Revenue Fund. MVD also manages many federal grants used for safety and training programs and activities. These federal grants are assigned project numbers within the Advantage™ Financial System for cost tracking and reporting purposes, though the federal funds are received through letters of credit draws for advances or reimbursement.

The PTD, established in 2004, administers grants from the Federal Transit Administration (FTA). Funds from these grants are received through the letter of credit process. These FTA grants benefit organizations that serve the elderly and handicapped and the bus companies in rural areas. Some grants also are provided to ADOT and local government councils of government (COGS) for cooperative transportation planning assistance. The PTD is also tasked with the state safety oversight of the light rail system in Phoenix.

The ITD has three major functional areas within the division. These areas are Development, Operations, and Valley Transportation. In addition there is an Office of Management and Budget for the division. There are eight district offices within the Operations Group, located throughout the state, responsible for overseeing construction projects and maintenance activities for all of the state, except the Phoenix area. The Valley Transportation area oversees the two remaining districts, Phoenix Construction and Phoenix Maintenance. In addition to internal staff, the ADOT uses private industry consultants, through contracts, to design roads and bridges. ADOT also

awards contracts to companies to construct the completed designs. Statutory guidelines are followed in the awarding of these contracts, and ADOT oversees the completion of the projects through program managers and resident engineers in the district offices. As the flowcharts and descriptive processes in this document will show, from the very first analysis of potential projects to the final payment to a contractor for a construction project, all divisions and offices in ADOT work closely together. Throughout the following pages, as each process is analyzed (from project assessment, to project development, to design, to construction), each unit involved (from all divisions) will be reviewed and their interaction discussed.

Information Systems Being Used Relative to Projects

There are a number of automated systems being used by ADOT to collect and store data about the state highway system. Different units within ADOT administer these systems. Most of the databases identify locations using the route and milepost of the place described. The TPD maintains a State Highway Log with specific state highway routes and milepost designations for every mile of state roadway. A few of the major information systems used by ADOT and their purpose are as follows:

1. The Highway Performance Monitoring System (HPMS) contains geometric (elevation, horizontal curvature, vertical curvature, etc.) information about the state's roadways, as well as traffic counts and functional classifications.

2. The Arizona Transportation Information System (ATIS) is a geographical information system (GIS), containing data about the roads in Arizona. This system contains, among other things, information about highway locations, land use, vegetation, soils, political boundaries, riparian and wilderness areas, airports, railroads, and accident data. The ATIS GIS information is used by many ADOT entities, such as Transportation Planning (maps, asset management, etc.), Traffic Engineering (monitoring location of traffic accidents), Environmental Planning, Natural Resources, and Traffic Operations (tracking road closures). This list only partially covers uses for this information.

3. Every year in June, the Priority Programming System (PPS) is used to produce the Five-Year Transportation Facilities Construction Program, a planning document for the succeeding five-year period. This planning document, which is a budget document, details the projects planned for the future five years. The projects in this database are listed by budget item number, and contain not only location and type of work, but also the intended type of funding to be used.

4. The Arizona Bridge Inventory Storage System (ABISS) is an ADOT created system that stores information about the condition of bridges within Arizona, and is used to help prioritize projects that may be needed to repair or replace them.

5. Primavera is a project information, scheduling and resource management software that the Program and Project Management Office uses to support project managers. More information about this software, and details of the procedures used in the Project Scheduling area, can be found in Section E of this document.

6. The Field Office Automation System (FAST) is used by the Contracts and Specifications Office, the construction field offices, and the Field Reports Office to track progress and payment requests by contractors on construction projects. This system is also used to produce the monthly progress estimates transmitted by the Field Offices to the Field Reports Office, which, in turn forwards these documents to the Financial Management Services, Contract Accounting Unit to make monthly construction contractor payments to contractors based on an estimate of project completion.

7. The Advantage™ Financial System is ADOT's automated accounting system that includes a project accounting, reporting and billing sub-system used to track highway project costs, to generate billings (invoices) to the federal government, and to distribute costs to ultimate funding sources. This sub-system is fully integrated with the financial system, and includes payments to contractors, consultants, and ADOT payroll costs related to accomplishing work on the highway system. Costs for projects that are approved for federal reimbursement by FHWA are distributed to federal providers, at the agreed upon pro rata share, by the weekly "billing process". This billing program creates an electronic invoice (request for reimbursement) to FHWA. The funds will normally be reimbursed to ADOT within two days. In the case of state funded projects, a billing fund transfer may be created causing one state-controlled fund to repay another depending on how the project is set up,

and how costs were paid. A further explanation of the project accounting, reporting and billing sub-system can be found in Section D of this document.

8. The Right of Way section uses the Parcel Acquisition and Tracking System (PATS) to record information about acquisitions and appraisals of land needed for construction projects.

9. The Maintenance Management System (MMS) is used by maintenance organizations (offices) and has several parts:

A. Performance Controlled System (PeCoS), which is a work order reporting system, to track hours, materials, and equipment used;

B. Sign Maintenance, which is used to capture work on signs;

C. Feature Inventory, that is intended to be ADOT's inventory of all appurtenances on the highway, such as signs, lighting, guardrails, and utility lines.

10. The Contract Management System is used by Engineering Consultant Services to monitor contract data relative to ADOT design and construction administration consultant contracts.

Attachments for Section A

Attachment #1: ADOT Organization Chart

Attachment #2: State Highway System Map

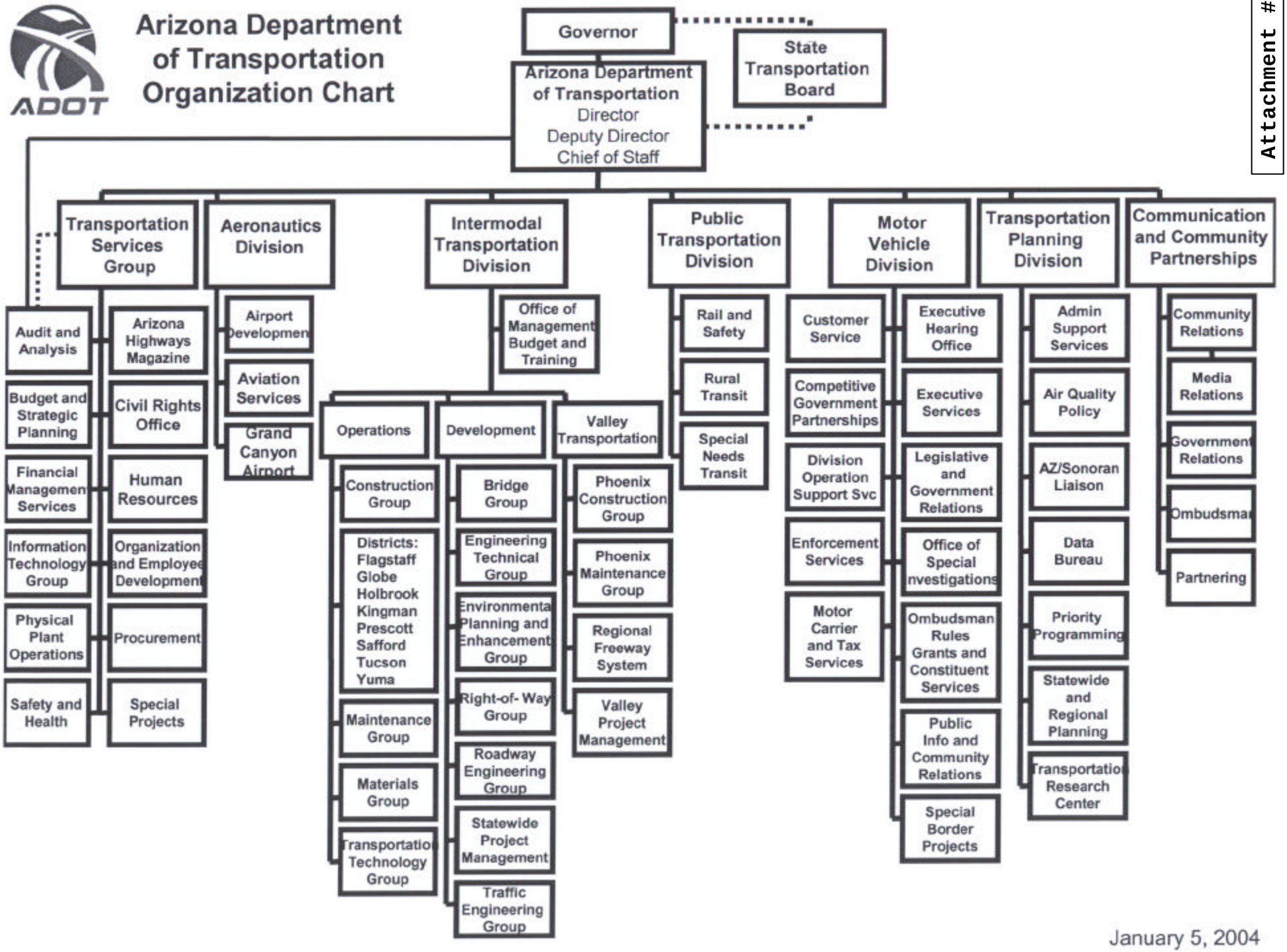
Attachment #3: National Highway System Roads in Arizona Map

Contracts for Section A

Arnold Burnham	TPD	602-712-8591
Lupe Harriger	TPD	602-712-8238
Mark Catchpole	TPD	602-712-8596
Doanh Bui	ITG	602-712-6649
Debbie Mayfield	TPD	602-712-7622
Cyndi Selby	TSG	602-712-7228
Montse Anderson	TSG	602-712-7355
Jamie Garrison	TPD	602-712-8958
Scott Friedson	PTD	602-712-6095

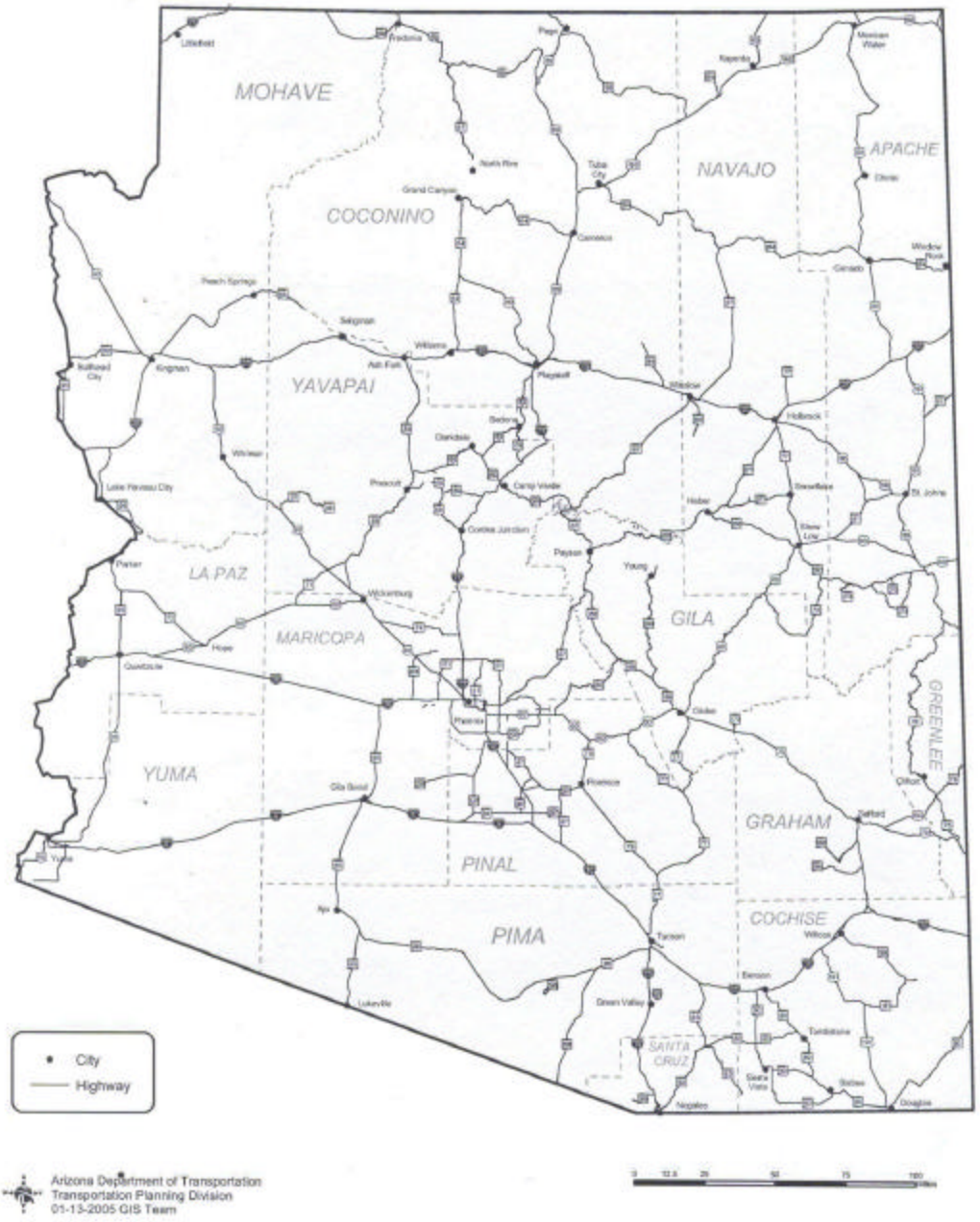
Attachment #1

Arizona Department of Transportation Organization Chart



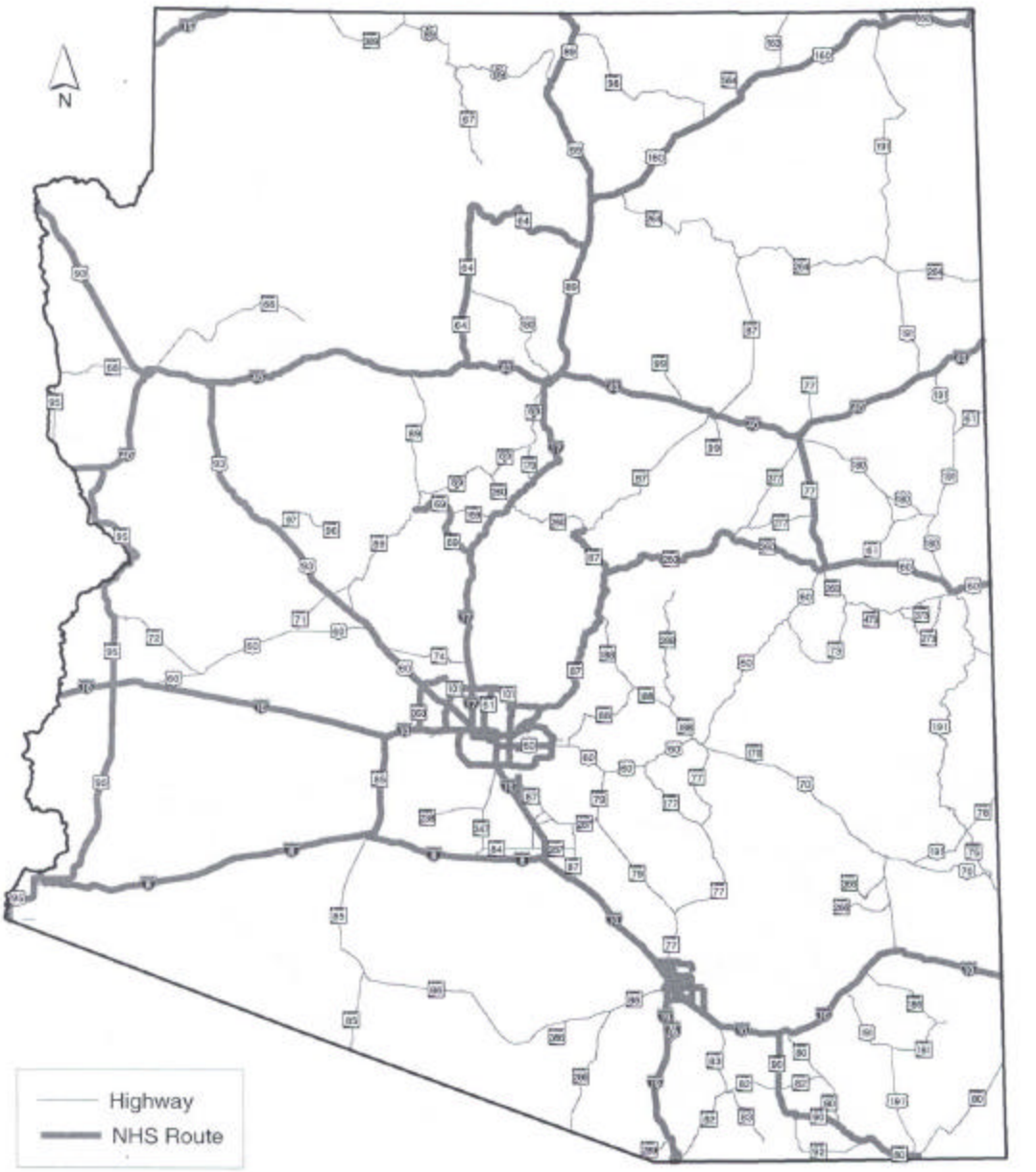
January 5, 2004

State Highway System



Attachment #2

Arizona National Highway System



National Highway System for Arizona includes some local roads and future segments of state highways.

Arizona Department of Transportation
Transportation Planning Division
GIS-T ADOT

Attachment #3

B: PROJECT PLANNING AND PROGRAMMING

Long Range Planning

The Arizona Department of Transportation is currently producing a Long Range Transportation Plan, which will be used to evaluate specific projects that the state is considering funding over the next twenty years. This process, which began in November 2001 and is continuing presently, is called MoveAZ. MoveAZ involves setting goals, involving the public in dialog about the process, and producing a final long-range plan. The Transportation Planning Division (TPD) has indicated that the objective of MoveAZ is "to protect and enhance the quality of life in Arizona." Public involvement in this long-term planning process, which is mandated by both federal and state law, is considered a fundamental necessity. The technical methodology developed in this plan will be used in the future to guide transportation planning.

Assessing Requests for Future Highway Construction Projects

Requests for future major highway construction projects are usually submitted to ADOT management through the District offices. The District Engineers work with local governments, citizens' groups, utilities, developers, and others, to identify needs and prepare requests for the preparation of a scope of work, project assessment, design concept report or other study. The "scoping requests" for major projects are reviewed by a technical advisory committee, and then referred to the Roadway Pre-Design Section for action by ADOT staff. Sub-program scoping is done within each sub-program group.

Project assessments are done for most projects developed by the Highway Development and Highway Operations Groups. According to ADOT procedures, the following project categories will require project assessments by the Roadway Pre-Design Secton:

- Interstate Reconstruction and Maintenance
- Priority Statewide
- Pavement Preservation
- Bridge Replacement
- District Minor
- Transportation System Management (TSM)
- Safety
- Guardrail
- Climbing Lanes
- Ports of Entry

The following projects will not be addressed by the Roadway Pre-Design project assessment process:

- Projects previously identified by location/design concept studies, general plans or special studies
- Seal coat and ACFC overlays where there is no safety improvement work included in the scope
- Highly specialized projects such as landscaping, lighting, traffic signal, signing, bridge repair, etc. The project assessment, if required, will be prepared by the unit having major responsibility

Requests for project assessments referred to the Roadway Pre-Design section are either submitted to the TPD, where the data is entered into the Priority Programming System (PPS) database, or the assessment requests are entered into the PPS database by the Roadway Pre-Design section. Even though these task requests are not yet considered "projects" for purposes of the Priority Programming System, they are entered into the PPS database along with the current fiscal year programmed projects, but are clearly shown to be "scoping only" with no budget item

number assigned. Roadway Pre-Design and TPD share this Priority Programming System database. Using this data from the project assessment request, a Project Master form is created using the report writing software tool called Crystal Reports. The Financial Management Services, Cost Accounting Unit is the owner of the Project Master form and uses the form to create a project in the Advantage™ financial system. At this stage of the process, the task involved in the scoping request is not yet considered a project in the Five-Year Transportation Facilities Construction Program, and may never be programmed if the project assessment determines it is not a viable project, or it may be deferred to a later year due to funding issues.

The Roadway Pre-Design section has published procedures that contain both the "In-House Project Assessment Guide" and a separate one for on-call consultants who may do the work. This procedure is lengthy, but some of the steps involved include: obtaining problem statement; getting pavement structural data and "as-built" plans from previous projects; obtaining right of way information; and scheduling a field review with all ADOT areas that need to be involved. For the field review, the requestor, District Engineer, project manager (if one has been assigned, otherwise the Roadway Pre-Design staff member), and all affected areas of ADOT are consulted. Traffic Engineering, Environmental, Utilities, Materials, and others are involved in the field review. During the field review, the project area is video field review. After field review, a preliminary project assessment report and detailed estimate is prepared for review by the supervisor and program/project manager. This report is distributed to all involved parties, including FHWA, the Forest Service (if applicable), etc. for review and consensus. This project assessment report is also provided to Program and Project Scheduling, who start tracking the project.

Attachment #4, Staff Design S1D Project Request, shows the process involved in the preparation of the scoping request, the Transportation Planning Division connection, and the transmittal of the Project Master form to the Financial Management Services, Cost Accounting Unit.

Contracts for a design concept report, or a study such as a corridor study that is needed in the assessment of a future project, are also administered by Roadway Pre-Design. These contracts require the requesting of a project with the sub-project phase designation of 01L. Pre-Design Location Study Project Request attached shows the processing of this Project Master form for 01L studies and the needed information.

Priority Programming Responsibility Delegated to the State Transportation Board

The Arizona Revised Statutes (ARS 28-6951) provide for the creation of a Transportation Board, made up of seven members appointed by the Governor. The Transportation Board has been given the responsibility of reviewing all proposed highway projects and creating a five-year prioritized plan ranking projects to be undertaken by ADOT. The state fiscal year period is from July 1 to June 30. This five-year plan, the Five-Year Transportation Facilities Construction Program, is completed each year for the future five fiscal year periods. The Five-Year Transportation Facilities Construction Program is updated annually, adopted by the Board, and submitted to the Governor by June 30 each year. The Five-Year Transportation Facilities Construction Program covers both highways and airports in Arizona.

Powers and Duties of the State Transportation Board

The Transportation Board has several key responsibilities and powers based on the authority delegated to it by state statute. Some of them are:

A. The Transportation Board is responsible for establishing a complete system of state highway routes.

B. The Transportation Board decides when a new state highway route is added to the system and which routes are to be improved.

C. The Transportation Board determines priority program planning and annually adopts the Five-Year Transportation Facilities Construction Program to carry out the construction or improvement of the highway system. The Transportation Board awards construction contracts and monitors the status of construction contracts through reports produced by Financial Management Services.

Implementation of the Five-Year Transportation Facilities Construction Program

In order to implement its policies and monitor the Five-Year Transportation Facilities Construction Program, the Transportation Board has created a committee appointed by the ADOT director, called the Priority Planning Advisory Committee (PPAC). This committee consists of the Director of the Transportation Planning Division, as chairperson, the State Engineer, the Chief Financial Officer, the Director of the Motor Vehicle Division, the Director of the Aeronautics Division, and the three Deputy State Engineers.

A larger number of projects are proposed by ADOT engineers, the public, Councils of Government planners, local governments, and others, than ADOT can obtain funds to complete. Therefore, a number of processes are used to prioritize these proposed projects.

Performance Based Rating System and Other Ranking Criteria

The performance based rating system is an objective process that uses several measurements of roadway characteristics, such as pavement conditions, traffic volumes, and accident statistics to rank needed projects.

Other criteria for ranking projects include: measurements of cost compared to number of motorists to receive benefits; type of route and route continuity; and recommendations of the ADOT professionals in the field who are close to the situations where projects are needed. Safety, land use and conservation factors, and recreational factors are also considered.

Maricopa Regional Freeway System Priorities

A Maricopa County freeway plan specifying the order in which the freeways were to be built was adopted by the Maricopa Association of Governments Regional Council in 1986 and updated in 1990. This plan is the basis for prioritizing current freeway projects, with the addition of data concerning volume, connectivity, and cost per lane-mile.

The Maricopa County portion of the program is based on a "Life-Cycle" approach to programming, meaning programming of all of the authorized funds remaining from the special excise tax fund. Using this approach, the emphasis is on the use of this major funding source for its dedicated projects and on estimating the available funds through the period of the tax.

Format of the Program Document

Many significant individual design, right of way and construction projects are identified and assigned budget line item numbers in the Five Year Highway Facilities Construction Program. The Five Year Highway Facilities Construction Program contains information about planned projects for the future five-year period; all planned projects will be assigned budget item numbers and funding designated specifically for each project. Individual projects that may have been identified in previous years and advanced through the five-year cycle, are identified by location, type of work, and funding source. In addition to these specific projects, the Five Year Highway Facilities Construction Program provides for many sub-programs, or lump sum amounts, for categories of work where specific projects will be identified throughout the year. For example, approximately $90-100 million was set aside in fiscal year 2003 for use in the pavement preservation process. These projects, identified through the Pavement Management System (PMS), are created with the goal of maintaining and possibly improving the state's highway system.

Other sub-programs, besides pavement preservation, include construction preparation, roadway group, traffic signals, bridge scour protection, planning and research, and others. A sample list of these sub-programs is attached as Attachment #6.

Attachments for Section B

Attachment #4: Staff Design Project Request

Attachment #5: Pre-Design Location Study Project Request

Attachment #6: List of Sub-Program Items from Five Year Highway Facilities Construction Program

Contacts for Section B

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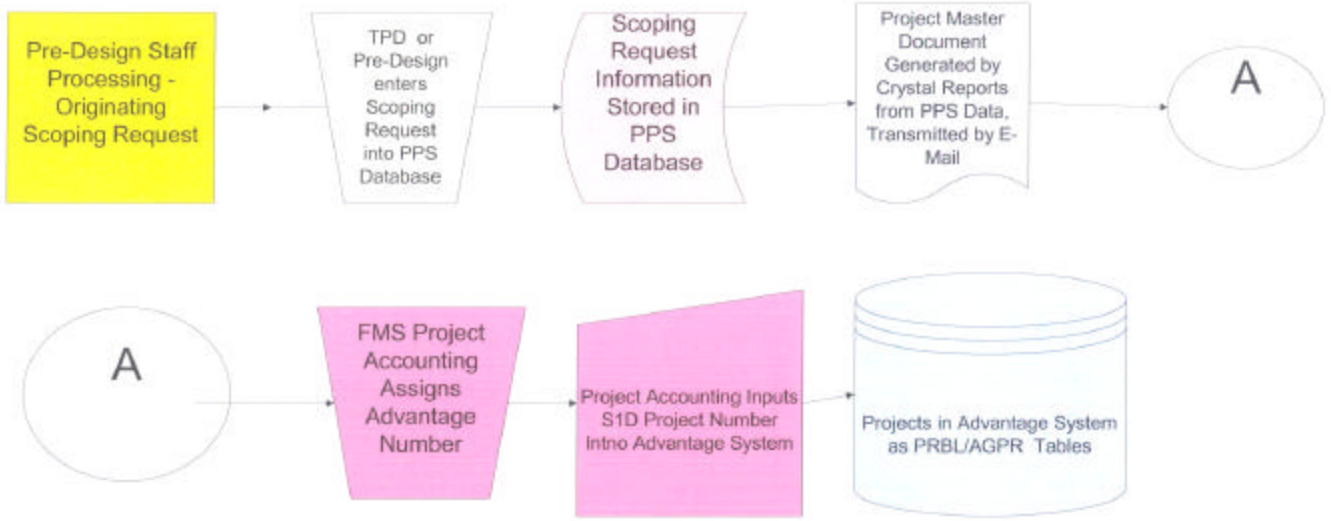
Arnold Burnham	TPD	602-712-8591

Attachment #4

STAFF DESIGN S1D PROJECT REQUEST

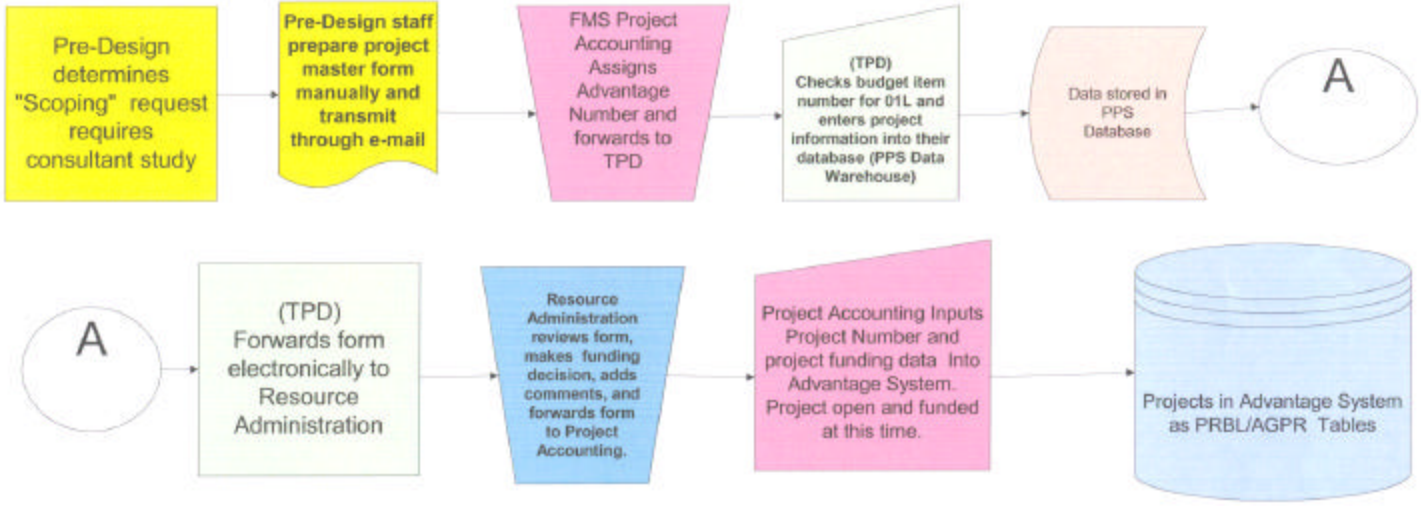


This flowchart represents projects that are not yet in the current 5 Year Program, where a scoping request has been generated through a request from the District Engineer, Councils of Government, or other outside interest group. The only sub-project usually created is an S1D. The funds for the S1D are budgeted administrative funds and no Highway Construction fund dollars are used. If consultant work is needed, Pre-Design will request an 01L or 01D sub-project. The following tasks that are completed for this process are:

1. New PM sent by requestor (see detail in task list).
2. Project Accounting checks for new project status and assigns number.
3. (TPD has already seen the scoping request originating this, so this step has already taken place).
4. Project accounting inputs data to Advantage.
5. Form is returned to originator.

Attachment #5

PRE-DESIGN LOCATION STUDY (01L) PROJECT REQUEST



This flowchart represents projects that are not yet in the current 5 Year Program, where upcoming projects are in the planning stages, and a location study or concept design study is felt to be needed.

1. Project master created by requester and send by e-mail.
2. Project Accounting checks PM form, assigns Advantage number.
3. Federal project number or "old" project number assigned.
4. Form sent to TPD for review, budget item verification, recon with PPS Database.
5. TPD transmits to Resource Admin for review, funding.
6. Form forwarded back to Project Accounting with comments.
7. Project Accounting enters data from form into Advantage system.

Page 1

Attachment #6

List of Sub-Program Items from Five-Year Program

Five Year Transportation Facilities Construction Program

SYSTEM PRESERVATION

Item No	Resource ID	Location	Type Of Work	Funds	Dollars in Thousands ($000) FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
♦ **PAVEMENT PRESERVATION, STATEWIDE PAVEMENT PRESERVATION**									
72505	111	PAVEMENT PRESERVATION - STATEWIDE	Pavement Preservation.	STATE/FA	$1,784	$0	$0	$0	$0
72506	111	PAVEMENT PRESERVATION - STATEWIDE	Pavement Preservation.	STATE/FA	$0	$11,122	$0	$0	$0
72507	111	PAVEMENT PRESERVATION - STATEWIDE	Pavement Preservation	STATE/FA	$0	$0	$90,000	$0	$0
72508	111	PAVEMENT PRESERVATION - STATEWIDE	Pavement Preservation	STATE/FA	$0	$0	$0	$90,000	$0
72509	111	PAVEMENT PRESERVATION - STATEWIDE	Pavement Preservation.	STATE/FA	$0	$0	$0	$0	$90,000
				FISCAL YEAR TOTALS	*$1,784*	*$11,122*	*$90,000*	*$90,000*	*$90,000*
			SUMMARY TOTAL FOR PAVEMENT PRESERVATION, STATEWIDE PAVEMENT PRESERVATION, 5 LINE ITEMS						*$282,906*
♦ **PAVEMENT PRESERVATION, STATEWIDE MINOR PAVEMENT PRESERVATION**									
74805	112	MINOR PAVEMENT PRESERVATION - STATEWIDE	Construct Minor Pavement Preservation.	STATE	$3,940	$0	$0	$0	$0
74806	112	MINOR PAVEMENT PRESERVATION - STATEWIDE	Construct Minor Pavement Preservation.	STATE	$0	$4,000	$0	$0	$0
74807	112	MINOR PAVEMENT PRESERVATION - STATEWIDE	Construct Minor Pavement Preservation.	STATE	$0	$0	$4,000	$0	$0
74808	112	MINOR PAVEMENT PRESERVATION - STATEWIDE	Construct Minor Pavement Preservation	STATE	$0	$0	$0	$4,000	$0
74809	112	MINOR PAVEMENT PRESERVATION - STATEWIDE	Construct Minor Pavement Preservation	STATE	$0	$0	$0	$0	$4,000
				FISCAL YEAR TOTALS	*$3,940*	*$4,000*	*$4,000*	*$4,000*	*$4,000*
			SUMMARY TOTAL FOR PAVEMENT PRESERVATION, STATEWIDE MINOR PAVEMENT PRESERVATION, 5 LINE ITEMS						*$19,940*
♦ **PAVEMENT PRESERVATION, PREVENTATIVE MAINTENANCE**									
77305	113	PREVENTATIVE PAVEMENT PRESERVATION STATEWIDE	Preventative Pavement Preservation	STATE/FA	$3,027	$0	$0	$0	$0
77306	113	PREVENTATIVE PAVEMENT PRESERVATION - STATEWIDE	Preventative Pavement Preservation.	STATE/FA	$0	$5,000	$0	$0	$0
77307	113	PREVENTATIVE PAVEMENT PRESERVATION - STATEWIDE	Preventative Pavement Preservation.	STATE/FA	$0	$0	$5,000	$0	$0
77308	113	PREVENTATIVE PAVEMENT PRESERVATION - STATEWIDE	Preventative Pavement Preservation.	STATE/FA	$0	$0	$0	$6,000	$0
77309	113	PREVENTATIVE PAVEMENT PRESERVATION - STATEWIDE	Preventative Pavement Preservation.	STATE/FA	$0	$0	$0	$0	$6,000
				FISCAL YEAR TOTALS	*$3,027*	*$5,000*	*$5,000*	*$6,000*	*$6,000*
			SUMMARY TOTAL FOR PAVEMENT PRESERVATION, PREVENTATIVE MAINTENANCE, 5 LINE ITEMS						*$25,027*

C. CONSTRUCTION PROGRAM FUNDING, BUDGETING AND OBLIGATIONAL TRACKING

One of the primary funding sources for the Arizona Department of Transportation's (ADOT) projects has been the Highway User Revenue Fund (HURF). The HURF funds come from the Vehicle License Tax (VLT), gasoline and use fuel taxes, motor carrier taxes, title and registration fees and other revenue related to the use of vehicles. These funds are collected by the Motor Vehicle Division (MVD) of ADOT, and then distributed on a monthly basis to the cities, towns, counties and the State Highway Fund. Other statutory distributions include transfers to the Department of Public Safety and the Economic Strength Project Fund. From the ADOT "pool of money", the state legislature appropriates funds for the operating costs of ADOT. These appropriated funds are the source of support for the Director's Office, Transportation Services Group (TSG), Intermodal Transportation Division (ITD) offices such as the State Engineer, Right of Way group, and all design and development offices. Recently, the appropriation process has also been applied to the funds used for the payroll and other staff costs of the construction offices in the ITD. Appropriated funds are also provided for the TPD, and administration of the MVD. Payments to outside vendors (on contracts) represent the largest portion of the agency's overall expenditures.

Another major funding source for projects is the Regional Area Road Fund (RARF). These funds, which are dedicated to the completion of the freeway system in Maricopa County, come from the ½ cent sales tax Maricopa County instituted in 1986, and which expires December 2005. The Arizona Department of Revenue collects these funds from businesses throughout the

county, and then deposits the funds in the Regional Area Road Fund through the State Treasurer. Following the guidelines of the law covering these funds, ADOT pays the Regional Public Transit Authority (RPTA) a portion of these funds each July, at the beginning of the state fiscal year. In fiscal year 2002, ADOT received, after the RPTA transfer, about $260 million in RARF funds.

Through a partnership agreement, the ADOT and Federal Highway Administration (FHWA) participate in many projects using funds from the Federal Highway Trust Fund. These projects are budgeted and costs paid for from state funds, then through a weekly cost distribution process, the portion of cost allowable on each project is designated as billable to the federal providers. Invoices are created through the project billing module of the Advantage™ system, and submitted to FHWA. Funds are received through a wire transfer to reimburse ADOT for the federal portion of project costs that are eligible.

Process of Tracking Program Budgets

The budgeting and obligation tracking process for the Five Year Transportation Facilities Construction Program begins with the planning process. Estimates of future federal funds and state revenues are used to make decisions about what major projects will be scheduled within each future fiscal year of the five-year period. In addition to the major projects, about 21% ($135.4 million of a total program budget of $531.6 million for fiscal year 2004) is set aside for sub-program projects to be identified after the program is published in June. These sub-programs represent funding for smaller but important projects in the categories of system preservation, system management, and system improvements. These sub-program item numbers, along with the item numbers for the major projects, form the basis for tracking the obligations.

The largest outlay of funds for project costs is for the construction projects. The obligation of state and federal funds, as well as any third party providers for these projects, is based on the contracting process used by the ITD's Contracts and Specifications Office (C & S) or the contracting process used by ITD's Utilities and Railroad Section. This contracting process applies to the majority of the projects; however some projects, such as Freeway Management System projects, may be handled by ADOT's Procurement Office. Contract dollars and any projected administrative costs associated with the project are combined into a single project budget by the C & S Office (on the recapitulation sheet), which is then tracked or monitored by the Financial Management Services, Resource Administration Unit. The project budget is tracked throughout the life of the project. The anticipated additional project costs not tied to the construction contract would include: ADOT payrolls from the construction offices throughout the state (ADOT construction-engineering); costs of contract consultants who may be tasked with construction contract administration (consultant construction-engineering); Department of Public Safety traffic control (flagging) costs; utility relocation costs; habitat mitigation; or any incentives the contractor may earn.

For the design phase of a project, the Resource Administration Unit works closely with the contracting entities responsible for the consultant contracts to obtain all new contract information. They determine if funds are available before the contract is signed, and obligate funds as the contracts are advertised. In many cases, as in the instance of on-call design contracts, the consultants are used on many design projects by task order. The program obligation tracking, in this instance, is at the contract level. This tracking is in contrast to the method used for major design, construction, and right of way projects, which are obligated at the project level.

Although the obligation tracking process for most design is done primarily at the contract level, often within a sub-program item number, the Resource Administration unit does record all one-on-one contract/project relationships. The process of recording these contract/project associations applies especially to the construction projects.

Carter and Associates has prepared detailed flow charts of the processes used in the Resource Administration unit to track obligations and produce reports such as the Board Monitoring Report from their spreadsheets. A sample of their monthly report is attached (Attachment #8).

Through a series of spreadsheets, obligations and available balances based on use of funds through payments are recorded. Resource Administration works closely, also, with Contract Accounting, using Advantage™ contract tables, to help monitor contracts.

At the end of the fiscal year, Resource Administration compiles data from the spreadsheets, and from Advantage™, and publishes an "Underway Program" which represents balances of unexpended obligations as of June 30.

In a similar fashion to the state funds obligational tracking, Resource Administration submits each project agreement to FHWA, which obligates funds for ADOT. These federal obligations are then summarized and reports published of obligations by federal category of funds.

Attachments for Section C

Attachment #7: Sample Page from Five-Year Transportation Facilities Construction Program

Attachment #8: Sample Board Report

Contacts for Section C

John Klein	Resource Administration	602-712-8952
Janet Gafford	Resource Administration	602-712-4639
Debbie Garrett	Resource Administration	602-712-8740
Thom Noss	Resource Administration	602-712-6642
Melissa Wynn	TSG Budget	602-712-4617
Ron Boehmer	TSG Budget	602-712-4948

Attachment #7

Five Year Transportation Facilities Construction Program

ItemNo	Resource ID	Route	BMP	CO	D	Location	Length	Type of Work	Funding	Dollars in Thousands ($000) FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
10007	333	60	230	PN	G	PINTO VALLEY BRIDGE - MINE TURNOFF		Design passing lane	STATE	$0	$0	$300	$0	$0
17705	111	60	236	GI	G	COUNTY LINE - PINTO VALLEY	3	RR 3" + ARFC	STP	$0	$1,794	$0	$0	$0
19805	331	60	238	GI	G	PINTO VALLEY BRIDGE - PINTO VALLEY TURNOFF, WB	1	Construct Passing Lanes	STP	$0	$2,200	$0	$0	$0
21605	325	60	247	GI	G	RUSSELL RD - RAGUS RD	1	New sidewalk	TEA	$500	$0	$0	$0	$0
21505	311	60	252	GI	G	US 60 @ MP 251.6	0	Construct Turn Lane	STATE	$80	$0	$0	$0	$0
10706	125	60	342	NA	G	SHOW LOW CREEK BR, #00383	0	Construct Bridge	STP	$0	$2,600	$0	$0	$0
10706	125	60	342	NA	G	SHOW LOW CREEK BR, #00383	0	Construct Bridge	GVT	$0	$1,000	$0	$0	$0
17805	111	60	343	NA	G	MP 343 TO ROCKY ARROYO	5	Mill 3" (full width) & replace with AR-AC & AR-ACFC (full with)	STP	$1,900	$0	$0	$0	$0
17905	111	60	348	NA	G	ROCKY ARROYO - JCT SR 61	4	3" AC + ARFC	NH	$1,191	$0	$0	$0	$0
19306	111	61	353	AP	G	JCT US 60-E SECTION	9	1" Mill & 3" Cold Recycle & ARFC	STP	$0	$1,594	$0	$0	$0
* 13805	333	64	215	CN	F	MP 215 - MP 225	10	Construct Passing Lane	NH	$1,650	$0	$0	$0	$0
19406	111	66	57	MO	K	ANDY DEVINE TI	1	PCCP X-Road and Ramps	STP	$0	$1,871	$0	$0	$0
18005	111	70	272	GI	G	JCT 170 - EAST	3	RR 3" AC + ARFC	STP	$1,560	$0	$0	$0	$0
18005	126	70	272	GI	G	JCT 170 - EAST	3	RR 3" AC + ARFC	STATE	$200	$0	$0	$0	$0
19506	111	70	378	GE	S	DUNCAN-STATE LINE	7	RR 3" + ARFC	STP	$0	$2,080	$0	$0	$0
* 20605	311	72	27	LA	Y	SR 72 @ MP 27 (BOUSE)	0	Construct right turn lane	STATE	$85	$0	$0	$0	$0
10806	125	75	384	GE	S	SAND WASH BRIDGE	1	Replace Bridge	STATE	$0	$1,500	$0	$0	$0
18105	111	77	68	PM	T	JCT I-10 TO ORACLE RD	2	HIP + 1" ARAC	STATE	$546	$0	$0	$0	$0
11505	331	77	77	PM	T	CALLE CONCORDIA - TANGERINE RD	5	Widen to 6 Lanes	STP	$6,000	$0	$0	$0	$0
* 11505	342	77	78	PM	T	CALLE CONCORDIA - TANGERINE RD		Widen to 6 lanes	PAG 2.6%	$3,000	$0	$0	$0	$0
16406	342	77	82	PM	T	TANGERINE RD - PINAL COUNTY LINE, PHASE I	6	Design (roadway widening to 6 lanes)	STATE	$0	$507	$0	$0	$0
* 11108	342	77	82	PM	T	TANGERINE RD - PINAL COUNTY LINE, PHASE I	6	Construct roadway widening to 6 lanes	PAG 2.6%	$0	$0	$0	$3,235	$0
* 11108	342	77	82	PM	T	TANGERINE RD - PINAL COUNTY LINE, PHASE I	6	Construct roadway widening to 6 lanes	STP	$0	$0	$0	$1,327	$0
11409	342	77	82	PM	T	TANGERINE RD - PINAL COUNTY LINE, PHASE II	6	Construct roadway widening to 6 lanes	STP	$0	$0	$0	$0	$3,000
28604	325	77	114	PN	T	MAMMOTH	1	Construct sidewalks, lighting and landscaping.	TEA	$606	$0	$0	$0	$0
20106	331	77	141	GI	G	GILA RIVER RECREATIONAL SITES	4	Intersection improvements	GVT	$0	$479	$0	$0	$0
10906	331	77	145	GI	G	MP 145 - MP 147	2	Roadway Construction	STP	$0	$5,000	$0	$0	$0
11308	333	77	364	NA	H	MP 364 - 372	8	Construct passing lane	NH	$0	$0	$0	$1,800	$0
10107	333	77	364	NA	H	SR 77 @ MP 364		Design passing lane	STATE	$0	$0	$200	$0	$0
18205	111	77	374	NA	H	14 MILE HILL - 5 MILE WASH	11	3"AC + ACFC	NH	$2,455	$0	$0	$0	$0

* Scoping Not Completed

Attachment #8

ARIZONA DEPARTMENT OF TRANSPORTATION
FY 2004 Highway Program Monitoring Report
YTD Total Transportation Facilities Construction Program Summary
(Dollars in Thousands)

PROGRAM DATA
AS OF JUNE 23, 2004

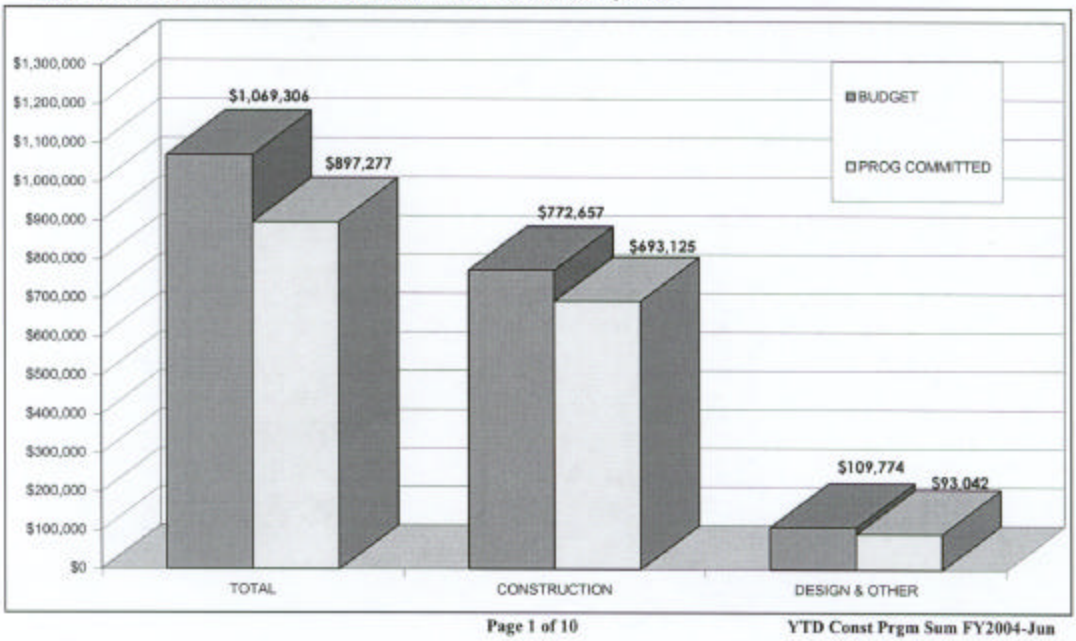
TRANSPORTATION BOARD
JULY 16, 2004

PROGRAM CATEGORY	PLANNED PROGRAM	REVISED PROGRAM (1)	PROGRAM COMMITTED (4) AMOUNT	%	ACTUAL COMMITTED(4)	COMMITTED VARIANCE
STATEWIDE						
CONSTRUCTION	463,324	454,406	384,206	84.55%	358,042	26,164
RIGHT-OF-WAY	61,073	57,242	30,943	54.06%	30,943	0
DESIGN & STUDY	51,674	52,991	47,921	90.43%	47,921	0
OTHER (3)	23,150	32,114	25,097	78.15%	25,097	0
STATE TOTAL (2)	599,221	596,753	488,167	81.80%	462,003	26,164
MARICOPA REGIONAL FREEWAY SYSTEM						
CONSTRUCTION	312,001	318,251	308,919	97.07%	291,572	17,347
RIGHT-OF-WAY	129,633	129,633	80,167	61.84%	80,167	0
DESIGN & STUDY	21,485	22,969	18,324	79.78%	18,324	0
OTHER (3)	1,700	1,700	1,700	100.00%	1,700	0
MAG TOTAL	464,819	472,553	409,110	86.57%	391,763	17,347
TOTAL	1,064,040	1,069,306	897,277	83.91%	853,766	43,511

(1) Revised program includes Board approved program changes. **(2) Includes PAG Program.**

(3) "Other" category includes subprograms such as training, public information, recreational trails program, risk management indemnification and hazardous material removal.

(4) Committed represents dollars advertised or otherwise committed; Program Committed represents dollars programmed; Actual Committed represents dollars advertised or actual dollars awarded, except for Right-of-Way. Right-of-Way Program Committed and Actual Committed are actual cash expended.



D. PROJECT COST ACCOUNTING AND DOCUMENTING FEDERAL PROJECTS

The Arizona Department of Transportation (ADOT) uses a subsystem of the agency-wide Advantage™ Financial System to record budgets, cost and descriptive data about highway projects. While the Five-Year Highway Facilities Construction Program is a fiscal year oriented budget document, the project data in Advantage™ is not fiscal year bound, but tied to project numbers that frequently have a life that spans multiple fiscal years. The state fiscal year goes from July 1 to June 30. The "current year" of the program represents the total dollars projected to be available for project use during the current fiscal year. Since most projects are not started and completed within the same fiscal year, the funds obligated for a contract to be used on a project can often be drawn from successive program budgets (this is especially true for right-of-way projects).

These concepts of "many to one" and "one to many" are difficult concepts when discussing the relationship of project budgets to the program budgets. The "many to one" idea means many project budgets are derived from one source of funds (such as a contract funded with one item number). For example, when an "on-call" contract is created with a consultant for design services, the full amount of the contract is obligated by the Resource Administration Unit. This "pool" of funds then may be used by project managers on many projects, as they need design work done on specific tasks. As a task order is assigned to a project within the contract (which will ultimately result in cost being reported for that project when invoices from the consultant are paid), Resource Administration makes a note of these project numbers but no change is made to the obligations. However, on the project tables in Advantage™, individual project budgets are

tracked with cost against that project, and information for each project represents only part of the total contract cost.

In addition, the "one to many" concept (more than one item number being used on projects, usually in successive years), creates difficulties in matching budget item information and project accounting information.

Monitoring contract cost for contracts with application to many projects is possible in Advantage™ through the contract monitoring tables. The key to these tables is the contract number, and the tables list the cumulative total cost for each project within the contract.

Starting the Project Cost Accounting Process in Advantage

The Advantage™ cost accounting process starts with the assignment of project numbers to each location specific job or phase of a job. ADOT staff use these numbers on all expenditure documents processed within the accounting system.

The document used to identify a project and its sub-projects in the system is a Project Master form. This document is submitted electronically (e-mail) to Project Accounting by the Project Manager. Project Accounting assigns numbers and returns the form to the Project Manager. Copies of the flowcharts and process mapping for the Project Accounting section prepared by the consultant Carla Carter and Associates are available. Attached are flowcharts, New Design/New Construction Project Request (Attachment #9) and Right of Way Initial Project Request (Attachment #10), which show the process involved in initiating two major types of new projects.

Format of Project Numbers

Consider this example, using project number H234901C:

The first character, "H", represents the project type:

H = ITD programmed projects;
S = local government sponsored projects;
P = planning projects
R = research projects
G = grants
E = aeronautics division projects

The next four characters (2349) comprise a numeric field that represents a sequential numbering of projects. Sub-projects are grouped based on their location and physical description.

The last three characters represent the sub-project number and phase. These phases are:

C = Construction
D = Design
L = Location or other study
P = Planning, research and transit
R = Right-of-way
U = Utilities
X = Non-construction
G = Geotechnical
E = Environmental

The PJ transaction is the document entered into the Advantage™ system using the Project Master form, and this document creates the following tables:

PRBL – Project Budget Line Table
AGPR – Agency Project Inquiry Table
PFYT – Project Fiscal Year Table
SPDT – Subproject Description Table
SPD2 – Subproject Description Table

The Advantage™ project number (input number) is tied to the federal project number by table entries for only certain project types. Projects with the following type codes are used to invoice the Federal Highway Administration (FHWA): H, S, P and R.

There are other projects included in the automated weekly cost distribution procedure which distributes cost to "other" federal providers, usually for grants, using the type codes: E and G. Through the Advantage™ process, the E & G projects are manually invoiced or invoiced through the Federal Transit Administration or Federal Aviation Administration systems.

Other project types are used to record costs for management purposes, but will not bill the federal government or a third party provider. Types of codes of non-billing projects are: X for general administrative costs; B for land, building and improvements (LBI) projects; L for general operations maintenance projects; and Z for audit costs.

Billing Process

Every project is assigned one or more funding sources in Advantage™ using the PZ transaction. These funding sources or providers, may be federal, state, bond or other. The "other" providers usually involve a third party contractual relationship with ADOT. The Advantage™ tables created or updated by the PZ transaction are:

PRBL - Project Budget Line Table
PFST - Project Funding Source Table (by individual provider)
PSUM - Funding Summary Table (all providers together)
FOBL - Federal Obligation Table
SOBL - State Obligation Table

The distribution of costs to these funding sources is controlled by the budget amounts and priorities assigned to each provider. Once a week, the billing program is run in the Advantage™

Financial System, using data accumulated during the previous week. There are major providers, called eligible or participating providers. There is also a default provider on each project for those costs that, by federal regulations, should not be billed to FHWA. This second type of provider is called an ineligible provider. Costs are assigned a designation of "I" Ineligible or "E" Eligible, based on the specific activity code and object code used on the document. Either code can be the deciding factor for something being ineligible. The Object Code Table and the Activity Code Table each carry designations as to "I" or "E" status for each object or activity code. Costs with an ineligible object code, for example, will be distributed to the ineligible provider (billed to this provider) on the PFST billing table and in the cumulative billing file (CUMBIL). Consequently, these ineligible costs will never be part of an invoice to FHWA. The state will pick up these default ineligible costs.

Documenting Federal Projects

In order to receive federal funds from the FHWA or FTA, ADOT is required to prepare a Statewide Transportation Improvement Program (STIP). This plan for the use of federal funds is comprised of the projects already identified in the Five Year Highway Facilities Construction Program which are scheduled to use federal funds, as well as local government sponsored projects identified by the COGs. The Metropolitan Planning Organizations, which includes Maricopa Association of Governments, Pima Association of Governments, Flagstaff Metropolitan Planning Organization, Central Yavapai Metropolitan Planning Organization and Yuma Metropolitan Planning Organization, each prepare an individual Transportation Planning Program (TIP) detailing their planned use of federal funds. These projects are combined with ADOT's

statewide federal projects and presented to the federal agencies (FHWA and FTA) for approval each federal fiscal year. No federal funds can be used on a project until it is approved through the STIP process.

At the time a contract is ready to be advertised for bids for a construction project, the project manager or C & S engineer, will prepare a letter to the FHWA requesting the use of federal funds for the contract. This process of requesting federal funds applies to design contracts as well as construction contracts. This letter will be based on a previous understanding between the PPAC members and the technical staff that federal funds will be requested for the project, and that the project is in the STIP.

The letter to request federal funds is forwarded to the Resource Administration staff responsible for tracking federal obligation authority to certify funds are available and to prepare a Federal Project Agreement (AZPR2X), which is used to officially obligate funds. This form is then returned to the originator and is transmitted with the original letter to FHWA.

When the Federal Project Agreement is signed by FHWA, a transaction is generated in the FHWA Project Accounting System (FMIS) that is picked up on the daily transaction log monitored by Resource Administration staff. This electronic notification by FHWA of action allows Resource Administration to take action to provide the Project Accounting section with instructions (through a funding request) to apply federal funds to the project.

Managing Federal Funds

Many strategies are used to maximize the efficient use of federal funds for projects. One of these strategies is the use of the Advance Construction (AC) process. This process is used on

large projects or when federal funds are not available (such as at the beginning of the federal fiscal year). The project agreement between FHWA and ADOT specifies that authority is being requested to AC the project, meaning FHWA gives approval for the project to be federally funded eventually, but for the time being, the project will be funded with state funds. Then, on a partial basis, these expenditures will be "converted" and billed to FHWA. The budget on the Advantage™ billing tables (PFST/PSUM) is used to control the process. As funds become available, additional dollars are added to the federal provider on the PSUM table, so that cost in the "billing accumulator" or "unbilled" file can bill. The timing of these changes relative to the billing cycle determines where the source of billing data will be derived.

Through the life of the federal project, the agreement between FHWA and ADOT can be modified, sometimes many times. Additional funds may be requested, or if it is seen that funds will not be used, returned by a Modified Project Agreement. When the project is completed, the documentation for every billing is reviewed for compliance with FHWA guidelines for authorization dates, allowable costs, and required approvals of work. Then a final cost statement prepared by the Final Voucher Unit of the Cost Accounting Section is submitted to FHWA.

Attachments for Section D

Attachment #9: New Design/New Construction Project Request

Attachment #10: Right of Way Initial Project Request

Contacts for Section D

Vicki Tsutsumita	FHWA	602-379-3645 Extension 126
Marsha Bloom	TSG-Cost Accounting	602-712-8007
Sheryl Bodmer	TSG-Cost Accounting	602-712-7204

Attachment #9

NEW DESIGN/NEW CONSTRUCTION PROJECT REQUEST - 01D/01C

This flowchart represents projects that are in the Five Year Program, usually as part of a sub-program such as Bridge Repair or Pavement Preservation. These projects do not require scoping and are usually designed and constructed with direct oversight by the program entity involved. The following steps are needed for these types of projects:

1. PM created by requester and sent by e-mail.
2. Project Accounting checks PM, assigns new Advantage number.
3. Federal project number or old project number assigned.
4. Form sent to TPD for review, budget item number verification, etc.

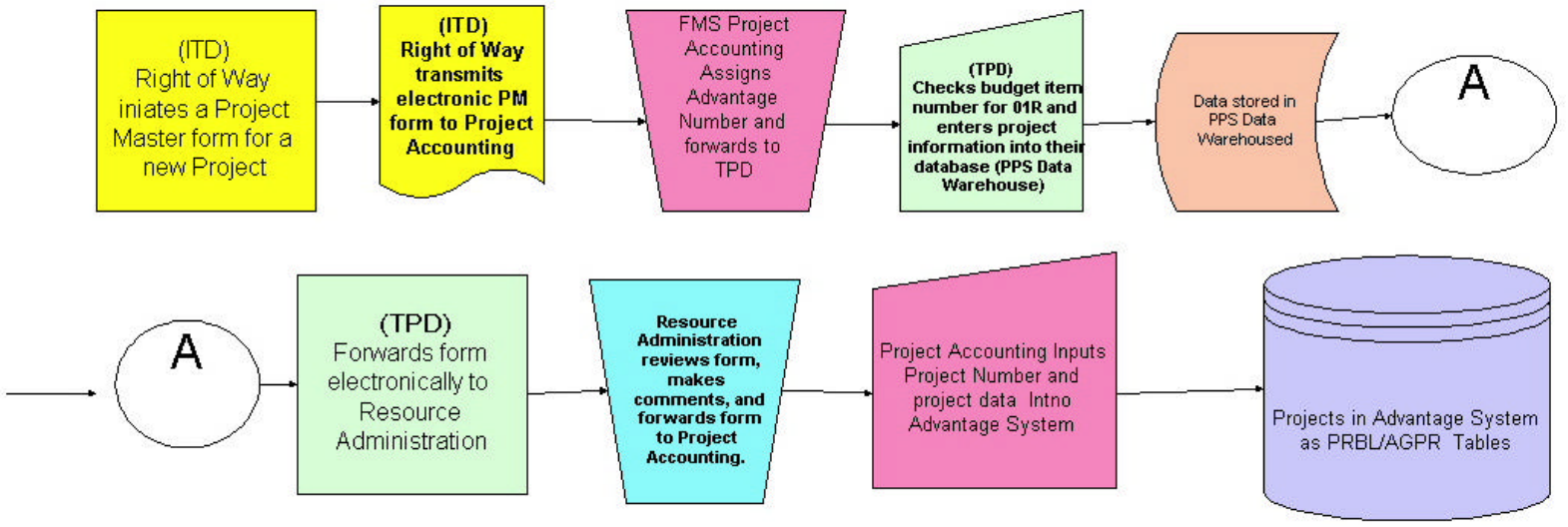
4A. TPD adds PM data to their database.

5. TPD transmits to Resource Admin for check, etc.
6. Form forwarded back to Project Accounting with comments.
7. Project Accounting enters data from form into the Advantage database.

Page 1

Attachment #10

RIGHT OF WAY INITIAL PROJECT REQUEST



This flowchart represents projects that are not yet in the current 5 Year Program, where upcoming projects are in the planning stages, and ROW knows additional information is needed about a specific right of way corridor.

These Project Master forms are requested frequently separately from the specific design/construction projects that will be requested in the future. The corridor review and appraisal process usually involves a much longer distance than any one design/construction project within the corridor.

E: PROJECT DEVELOPMENT

The Team Approach to Project Management

"ADOT highway development projects are assigned to a project manager by the Deputy State Engineer for Development on the recommendation of the manager of Statewide Project Management Section (SPMS)." (ADOT Highway Development Manual, 2.2.3)

This project manager may come from any of several design sections, such as Roadway Design, Bridge Design, Roadside Development or Environmental Planning; or, a project manager may be selected from the staff members of Statewide Project Management Office or the Valley Project Management Office. The type and size of the project, as well as the specific expertise needed, are criteria used in this decision.

A team is created with technical team members as needed, right of way staff, and including any outside review entities such as State Parks or the Forest Service. This team is responsible for decisions made during the life of the development process of the project.

Project Review Board

The Project Review Board (PRB) is responsible for approving any changes to programmed projects, as well as approving projects to be added to the program throughout the year. The PRB chairman is the Deputy State Engineer for Project Development, with the managers of the District Operations Group and the Statewide Project Management Section as permanent members. Two additional members chosen from among the remaining group managers serve on a rotating basis.

The PRB meets each week. Project Managers present their requests to the group, and a few minor changes to projects may be approved at this level. For the most part, requests reviewed by PRB are presented to the Priority Planning Advisory Committee (PPAC), with recommendations as to action needed by PPAC.

Priority Planning Advisory Committee

PRB recommendations are sent to the PPAC for a monthly review and decisions are then sent on to the Transportation Board. The PPAC information becomes the agenda for Board meetings. After the Board makes decisions, the affected parties are notified and results are published in the minutes of the Board meeting.

Program and Project Scheduling

When the project development team is created, the project is also picked up by the Program and Project Scheduling Office as part of a database used for tracking purposes. (See Section A of this document) The database used is based on a DBASE III system. Records are entered as soon as a project enters the design stage.

The Program and Project Scheduling Office uses the information in their database to populate a system of project tracking known as Primavera.

Right of Way Process

As part of the project development process, right of way clearance must be obtained for any new land needed for a construction project. ADOT has an office set up specifically designed to provide any services needed in this area. The office is organized with the following sections:

- Right of Way Plans is responsible for field surveys, right of way plans, property descriptions and legal documents needed for acquisition or disposal of property rights.
- Right of Way Statewide Acquisition has the responsibility for acquiring the property rights needed for construction and improvement of state highways throughout Arizona, with the exception of the Phoenix and Tucson metropolitan areas. This section also provides relocation assistance to eligible individuals and businesses displaced as a result of the state's acquisition. In addition to the headquarters office located in Phoenix, there are offices located in Tucson, Flagstaff, Kingman and Yuma.
- Right of Way Urban Acquisition acquires property rights needed for construction and improvement of state highways in the Phoenix and Tucson metropolitan areas. This office also provides relocation assistance to those businesses and individuals displaced in the two urban areas.
- The Right of Way Operations office provides support services to all right of way units, such as accounting support, contract management, computer support and records retention.
- Right of Way Project Management is responsible for issuing right of way project clearances prior to construction.
- The Right of Way Titles Section is responsible for providing title reports for all real property purchased or disposed of by ADOT.

Right of Way uses the Parcel Acquisition and Tracking System (PATS) to track those parcels desired, purchased and resold as excess property. The level of detail in this system is not available in the Advantage™ Financial System.

Right of Way clearance is required before construction work can begin. The project manager and the corresponding responsible parties in the Right of Way group track these milestones throughout the project design.

Right of Way projects are an exception to the rule in regard to the way that projects are funded. Most projects are funded through contracts that can have a life of two or more years. Right of Way projects are generally funded for the current fiscal year, and re-programmed through the Resource Administration unit by the allocation of new funds to the Right of Way lump sum item number each year in the Five-Year Transportation Facilities Construction Program.

During the building of the I-10 freeway through Phoenix, federal funds were used extensively. At present, however, the use of federal funds for Right of Way projects is limited.

Environmental Planning and Enhancement

This section maintains and implements an environmental planning program for ADOT in compliance with state and federal environmental laws and regulations to obtain appropriate environmental approval for state and local government projects. They also research and evaluate social, economic and environmental impacts of proposed projects. This section prepares and processes the necessary environmental clearance documents, including mitigation for identified impacts.

Design Section Project Managers

In the case of the pavement preservation projects, which account for a significant portion of the total program, the Roadway Design Section is responsible for "delivering" this program, and all project managers for the pavement preservation projects come from that section. The major or "large" projects dealing with roadway work are sometimes done "in house" by Roadway Design, but usually are given to Statewide Project Management or Valley Project Management to advertise for design work.

In addition to Roadway Design, there are units for Bridge Design, Traffic Design, Environmental and Enhancement Design, and Utility and Railroad Engineering.

Statewide Project Management

The Statewide Project Management Section (SPMS) is responsible for overseeing the project development of all projects that are not part of the Maricopa County regional freeway system. This section works very closely with all of Project Development to ensure that all projects are made ready for construction according to the schedule.

Valley Project Management

For management of projects associated with the regional freeway system in Maricopa County, project managers are chosen from the Valley Project Management Office. These project managers specialize in the types of projects needed to complete the urban freeway system.

Engineering Consultants Services

Consultants hired by ADOT through the contracting process overseen by the Engineering Consultants Services (ECS) do most design work on ADOT projects. This office is familiar with the requirements of the state laws of Arizona and the particular federal guidelines for contracting needed on projects funded with Federal Highway Administration funds. ECS advertises Requests for Proposals on new projects, chooses consultants, prepares and processes contracts and records these with the state Attorney General's Office. They follow up with the processing of monthly requests for reimbursement from the consultants under contract. These requests for payment are coordinated with the project manager for the design or location project, and then forwarded to the Contract Accounting Section where payment is made. These costs are recorded against the specific design projects using the Advantage™ project number and the Advantage™ billing system.

Utilities and Railroad Section

The Utilities and Railroad Section has two main objectives in its mission statement:

1. Minimize delay and prevent hazards related to utilities on highway construction projects; and
2. Administer the railroad crossing safety program in partnership with FHWA.

The Utilities and Railroad Section prepares agreements with companies responsible for utilities or railroad crossings affecting highway projects and oversees any payments or contributions to the funding of projects from these entities.

Design Process

ADOT engineers do a very small percentage of actual design work on highway projects. ADOT relies on consulting engineers to prepare design plans for most projects. This process of designing projects has specific milestones that mark the progress of the process. This process is overseen by the project manager, with help from the specialists within each technical area, such as structures, signing and lighting, traffic engineering, and so forth when needed.

Contacts for Section E

Susan Tellez	ECS	602-712-7720
Henri Verdugo	Right of Way	602-712-8763
John Carr	Roadway Design	602-712-7341
Doug Cosper	Project Scheduling	602-712-7723
Paula Gibson	Right of Way	602-712-8758

F: CONSTRUCTION

The actual construction of a highway project is done by a general contractor following plans and specifications supplied by ADOT. The ADOT Office of Contracts and Specifications (C & S) is responsible for preparing a detailed estimate of the materials and manpower needed to complete the project. They work with the project manager to produce an estimate of work items and quantities required to do the job that is made available for contractors interested in bidding on the project to purchase along with the plans. The contractor then extends the items and quantities using their required unit price to produce a bid for the job.

Pre-Qualification Committee

ADOT has a process in place to pre-qualify contractors interested in highway projects. This committee reviews companies to determine that they possess the technical and financial soundness to make successful completion of projects likely. This committee of engineers, along with a CPA from Financial Management Services, certifies contractors for the right to bid on projects of a specific size and complexity.

Contract Bidding Process

Advertisements are published by the C & S providing information needed by contractors to prepare bids for jobs. ADOT sells, for a nominal price, copies of design plans and ADOT's estimates of quantities and items of work needing to be done. ADOT expects that each

contractor will use the plans to prepare their own estimates. These records are retained as documentation as to how bids were derived.

Awarding a Contract

After bids are submitted, C & S personnel review all bids in order to determine who is the lowest responsible bidder. Unless there are special circumstances, this low bidder is recommended by C & S to the State Transportation Board as the company to be awarded the contract.

When the contract has been awarded by the Board, C & S sends the detailed estimate from the company (which becomes part of the contract), along with a recapitulation sheet, to the Cost Accounting and Resource Administration Units. The "Recap Sheet" summarizes tasks by the contract item category, showing funding for each part of the work across the spreadsheet. The Contract Accounting section in Financial Management Services uses the contract information from C & S to establish control tables in Advantage™ for each new contract.

Contract Monitoring System

Cost Accounting maintains a system to track obligations and expenditures against construction contracts. Once the tables are established based on new contracts, each contractor payment is recorded electronically against these tables. The payments update the "available funds" field for each contract.

Construction District and Field Office Responsibility

Following the contract being awarded, the Project Manager turns the primary responsibility for the oversight of the actual work over to the local construction field office. The Resident Engineer, working with the construction district office, uses the electronic contract information forwarded from C & S through the FAST system. The Resident Engineer represents ADOT throughout the remaining life of the contract in dealing with the contractor.

Field Reports and FAST

C & S creates a record in the FAST system for every new project/contract. C & S downloads data from the Advantage™ system concerning the project location. The remaining information concerning award information, field office information, time requirements, contract quantities and items of work are entered into the FAST system and transmitted as a template to the field office. Each month, pay estimates are forwarded on these templates from the field office to the office of Field Reports. Field Reports is responsible for helping the field offices follow contract guidelines, especially federal requirements, and work with Financial Management Services to see that the contractors are reimbursed for estimates of work each month.

Partnering Effort

Before the contractor starts work on the project, a partnering workshop is held with ADOT personnel and representatives from the contractor. Every effort is made to anticipate the potential problems between the partners in the project (any ADOT office involved, our engineer, FHWA if applicable, and so forth) and the contractor. ADOT is committed to working with the contractor and, if possible, avoiding an adversarial relationship.

Completion of Contract Work

When the contract work is successfully completed, the Resident Engineer in charge of the project sends a memorandum to Field Reports. Field Reports then sends a standardized completion memorandum to a specific list of ADOT personnel. The Resident Engineer and Field Reports works with the contractor to prepare a final estimate, balance of contract work, and other required documentation needed at the close of a project. This package of closeout information is sent to Field Reports, who checks and determines whether all requirements for contract and federal requirements have been met. The closeout information is then sent to Contract Accounting in Financial Management Services.

Contacts for Section F

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